NAME OF WORK : IMPROVEMENTS AND ASPHALTING TO CHIKKADINNE AND SURROUNDING AREAS IN ATTUR WARD NO 03 OF YELAHANKA SATELLITE TOWN SUB DIVISION.

Quality Control Reports

First and Final Bill

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Certificate No.: TC-8548

TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2022-07-24-01** **Date: 26-07-22**
Project Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division
Agency	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064
Customer Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23
Date of Receipt	:	24-07-22
Source of Sample	:	Attur Layout
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	24-07-22
Oven Dry Weight	:	11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

* The results obtained are satisfactory as per standard requirements.

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ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
ಜ.ಜ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

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R.KARTHIK RECHAN
Authorized Signatory
Quality Manager

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2022-07-24-01**	**Date: 26-07-22**
Project Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division	
Agency	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064	
Customer Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23	
Date of Receipt	:	24-07-22	
Source of Sample	:	Attur Layout	
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)	
Date of test	:	24-07-22	

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

* The results obtained are satisfactory as per standard requirements.

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Authorized Signatory
Quality Manager

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ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2022-07-24-01** **Date: 23-08-22**
Project Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division
Agency	:	Sri. Ramesh Y B, S/o Basavaraj, No.34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064
Customer's Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23
Date of Receipt	:	25-07-22
Sample Type	:	Zuari 43 grade
Source of Sample	:	Attur Layout
Reference to BIS codes	:	IS 8112 : 2013, 43 Grade Ordinary Portland cement Specification , IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, (RA 2019) Determination of Compressive Strength, Clause 6
Date of test	:	26-07-22
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength			
Sl.No.	**Physical properties**	**Results**	**Requirement as per IS 8112: 2013**
1	3 Days	24.5N/mm^2	Not less than 23 N/mm^2
2	7 Days	35.5N/mm^2	Not less than 33 N/mm^2
3	28 Days	45.0N/mm^2	Not less than 43 N/mm^2

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF FINE AGGREGATE

ab ID	:	CP-2022-08-01-01 **Date: 03-08-22**
roject Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division
gency	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064
ustomer's Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23
ate of Receipt	:	01-08-22
ample Type	:	Fine Aggregate (M-Sand)
ource of Sample	:	Attur Layout
eference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	01-08-22
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	21	21	2.1	97.9	90-100	90-100	90-100	95-100
3	2.36 mm	185	206	20.6	79.4	60-95	75-100	85-100	95-100
4	1.18 mm	201	407	40.7	59.3	30-70	55-90	75-100	90-100
5	600 micron	168	575	57.5	42.5	15-34	35-59	60-79	80-100
6	300 micron	229	804	80.4	19.6	5-20	8-30	12-40	15-50
7	150 micron	153	957	95.7	4.3	0-10	0-10	0-10	0-15
8	Pan	43	1000	100.0	0.0	---	---	---	---
Result :The tested Sample Conforms to Grading Zone II									

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2022-08-01-01** **Date: 03-08-22**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.6	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	14.8	
3	Specific Gravity	2.62	_
4	Bulk Density(Loose) (Kg/l)	1.50	_
5	Bulk Density(Compacted) (Kg/l)	1.55	_
6	Water Absorption(%)	0.28	_
7	Aggregate crushing Value(%)	26.6	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface
8	Aggregate Impact Value(%)	24.3	30% for Aggregates to be used in concrete for wearing Surface. 45% for Aggregates to be used in concrete other than for wearing Surface

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF CEMENT CONCRETE CUBES

D	:	CP-2022-08-04-01 **Date: 10/08/2022**
ct Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division
cy	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064
omer's Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23
of Receipt	:	04-08-22
omer ID	:	Drain Bottom Raft- 3rd A Cross Thirumala Nagar
ple Type /Size	:	150X150X150 mm
ple grade/Age	:	M20 / 7 Days Compressive Strength
rence to BIS codes	:	IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl 5
of test	:	10/08/2022

	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
	Drain Bottom Raft-3rd A Cross Thirumala Nagar	M20	03/08/2022	10/08/2022	149.17 X 149.09 X 150.96	22240	8.520	331.4	14.9	14.9
	Drain Bottom Raft-3rd A Cross Thirumala Nagar	M20	03/08/2022	10/08/2022	149.41 X 151.59 X 151.62	22649	8.958	342.0	15.1	
	Drain Bottom Raft-3rd A Cross Thirumala Nagar	M20	03/08/2022	10/08/2022	149.67 X 149.42 X 151.73	22364	8.980	331.0	14.8	

he results obtained are satisfactory as per standard requirements.

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

	: CP-2022-08-06-01	Date: 02/09/2022
Name	: Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division	
	: Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064	
ner's Reference	: BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23	
f Receipt	: 06-08-22	
ner ID	: Drain Bottom Raft- 3rd A Cross Thirumala Nagar	
e Type /Size	: 150X150X150 mm	
le grade/Age	: M20 / 28 Days Compressive Strength	
ence to BIS codes	: IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5	
of test	: 02/09/2022	

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Raft-3rd A Cross Thirumala Nagar	M20	05/08/2022	02/09/2022	149.99 X 151.24 X 151.82	22684	8.555	549.0	24.2	23.5
Drain Bottom Raft-3rd A Cross Thirumala Nagar	M20	05/08/2022	02/09/2022	151.23 X 149.07 X 151.49	22544	8.328	507.2	22.5	
Drain Bottom Raft-3rd A Cross Thirumala Nagar	M20	05/08/2022	02/09/2022	149.17 X 149.09 X 151.70	22240	8.890	529.3	23.8	

he results obtained are satisfactory as per standard requirements.

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Quality Manager

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TEST REPORT OF FINE AGGREGATE

: CP-2022-08-06-01 Date: 08-08-22

ICAL PROPERTIES

Tests	Result	Requirements as per IS 383:2016
Water Absorption(%)	1.5	–
Specific Gravity	2.59	–
Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

results obtained are satisfactory as per standard requirements.

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TEST REPORT OF CEMENT CONCRETE CUBES

: CP-2022-08-16-01 Date: 19/08/2022

: Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division

: Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064

ference : BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23

t : 16-08-22

: Drain Side Wall - 2nd A Cross Thirumala Nagar

Size : 150X150X150 mm

/Age : M20 / 7 Days Compressive Strength

BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

: 19/08/2022

tification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Side Wall - I A Cross mala Nagar	M20	12/08/2022	19/08/2022	149.79 X 150.25 X 150.45	22506	8.995	319.6	14.2	14.4
Side Wall - I A Cross mala Nagar	M20	12/08/2022	19/08/2022	150.64 X 150.97 X 149.01	22742	8.269	325.2	14.3	
Side Wall - I A Cross mala Nagar	M20	12/08/2022	19/08/2022	149.76 X 150.96 X 150.00	22608	8.814	334.6	14.8	

btained are satisfactory as per standard requirements.

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Format No: CP/TF/01

TEST REPORT OF PRECAST COVER SLAB

: CP-2022-08-16-01 **Date: 20-08-22**

: Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division

: Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064

eference : BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23

pt : 16-08-22

/Size : Precast Cover Slab (100 mm Thick)

mple : Attur Layout

BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete

: 16/08/2022

ntification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
	(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
over Slab-1	100.01	100.69	1.456	7854	145.5	18.5	17.2	21.5
over Slab-2	100.04	100.75	1.245	7859	162.5	20.7	19.2	24.0
over Slab-3	100.03	100.86	1.365	7857	173.4	22.1	20.5	25.7

s obtained are satisfactory as per standard requirements.

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TEST REPORT OF CEMENT CONCRETE CUBES

: CP-2022-08-18-01 Date: 13/09/2022

ame : Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division

: Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064

's Reference : BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23

eceipt : 18-08-22

ID : Drain Bottom Raft - Main Road Thirumala Nagar

ype /Size : 150X150X150 mm

rade/Age : M20 / 28 Days Compressive Strength

e to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

est : 13/09/2022

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
rain Bottom Raft - Main Road Thirumala Nagar	M20	16/08/2022	13/09/2022	149.26 X 150.80 X 149.55	22508	8.937	508.7	22.6	23.4
rain Bottom Raft - Main Road Thirumala Nagar	M20	16/08/2022	13/09/2022	151.46 X 151.33 X 150.44	22920	8.896	538.6	23.5	
rain Bottom Raft - Main Road Thirumala Nagar	M20	16/08/2022	13/09/2022	151.52 X 151.92 X 149.45	23019	8.631	557.1	24.2	

ults obtained are satisfactory as per standard requirements.

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST RESULTS OF GRADATION FOR WMM

ID	:	CP-RW-2022-08-20-01 **Date: 22-08-22**
ject Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division
ncy	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064
tomer Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23
e of Receipt	:	20-08-22
rce of Sample	:	Attur Layout
pe of Mix	:	WMM (Wet Mix Macadam)
te of test	:	20-08-22
en Dry Weight	:	11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	402	402	3.7	96.3	95-100
22.4	2286	2688	24.4	75.6	60-80
11.2	2377	5065	46.0	54.0	40-60
4.75	2875	7940	72.2	27.8	25-40
2.36	1201	9141	83.1	16.9	15-30
0.6	801	9942	90.4	9.6	8-22
0.075	895	10837	98.5	1.5	0-5

The results obtained are satisfactory as per standard requirements.

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Certificate No.: TC-5548

TEST RESULTS OF GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011)

	:	CP-RW-2022-08-10-01 **Date: 12-09-22**
Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division
	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064
ıer Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23
Receipt	:	10-09-22
f Mix	:	DBM-Plant (Dense Bituminous Macadam)
test	:	10-09-22
of Sample	:	5000 Grams

ieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	250	250	5.00	95.00	90-100
19	350	600	12.00	88.00	71-95
13.2	450	1050	21.00	79.00	56-80
4.75	1750	2800	56.00	44.00	38-54
2.36	400	3200	64.00	36.00	28-42
0.3	1350	4550	91.00	9.00	7-21
0.075	250	4800	96.00	4.00	2-8
PAN	200	5000	0.00	0	0

esults obtained are satisfactory as per standard requirements.

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TESTS RESULTS ON STABILITY OF MIX

ab ID	:	CP-RW-2022-08-10-01 **Date: 13-09-22**
roject Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division
gency	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064
ustomer Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23
ate of Receipt	:	10-09-22
ype of Mix	:	DBM (Dense Bituminous Mecadam)
Date of test	:	10-09-22

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

SLNo	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	–

* The results obtained are satisfactory as per standard requirements.

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com
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Lab ID : CP-RW-2022-09-19-01 Date: 20-09-22

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 477

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-
37.5	0	0	0	100.0	100
26.5	14.4	14.4	3.02	97.0	90-100
19	24	38.4	8.05	91.9	71-95
13.2	120	158.4	33.21	66.8	56-80
4.75	96	254.4	53.33	46.7	38-54
2.36	80	334.4	70.10	29.9	28-42
0.3	62.4	396.8	83.19	16.8	7-21
0.075	52.8	449.6	94.26	5.7	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 476

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
26.5	14.8	14.8	3.11	96.9	90-100
19	24	38.8	8.15	91.8	71-95
13.2	120	158.8	33.36	66.6	56-80
4.75	96	254.8	53.53	46.5	38-54
2.36	78	332.8	69.92	30.1	28-42
0.3	62.4	395.2	83.03	17.0	7-21
0.075	52.8	448	94.12	5.9	2-8

* The results obtained are satisfactory as per standard requirements.

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ಜಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

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Certificate No.: TC-5548

TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

	:	CP-RW-2022-09-15-01 Date: 17-09-22
Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division
	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064
ner Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23
f Receipt	:	15-09-22
of Mix	:	BC-Plant (Bituminous Concrete)
of test	:	15-09-22
Dry Weight	:	5000 Grams

Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

e results obtained are satisfactory as per standard requirements.

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FOR CIVIL Pro.
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

End of Report

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com
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YSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

	:	CP-RW-2022-09-15-01 Date: 18-09-22
me	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division
	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064
Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23
eceipt	:	15-09-22
lix	:	BC (Bituminous Concrete)
st	:	15-09-22

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

roperty	Test	Result	Specification	Method of Test
ical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
trength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
ific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
r Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

ults obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2022-09-21-01

Date: 24-09-22

Project Name : Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division

Agency : Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064

Customer Reference : BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23

Date of Receipt : 21-09-22

Type of Mix : BC (Bituminous Concrete)

Source of Sample : 2nd A Cross

Date of test : 21-09-22

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	472.5	471.5
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.50	5.70
4	Average percentage	%	5.6	

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ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-106

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2022-09-25-01**	**Date: 27-09-22**
Project Name	:	Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division	
Agency	:	Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064	
Customer Reference	:	BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23	
Date of Receipt	:	25-09-22	
Source of Sample	:	Attur Layout	
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)	
Date of test	:	25-09-22	

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.7%	
Combined Flakiness and Elongation Index for WMM	25.5%	

• The results obtained are satisfactory as per standard requirements.

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) : CP-RW-2022-11-23-01 Date: 24-11-22

AFTER EXTRACTION - Trail-1

Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	0	0	0.0	100.0	90-100
9.5	78	78	16.5	83.5	70-88
4.75	111	188.5	39.8	60.2	53-71
2.36	75	263.5	55.6	44.4	42-58
1.18	32	295.5	62.3	37.7	34-48
0.6	36	331	69.8	30.2	26-38
0.3	39	369.5	78.0	22.0	18-28
0.15	29	398.5	84.1	15.9	12-20
0.075	37	435	91.8	8.2	4-10

AFTER EXTRACTION - Trail-2

al Weight of the Sample(gm) : 475

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.9	86.1	70-88
4.75	112	178	37.5	62.5	53-71
2.36	75	253	53.3	46.7	42-58
1.18	29	282	59.4	40.6	34-48
0.6	25	307	64.6	35.4	26-38
0.3	46	353	74.3	25.7	18-28
0.15	45	398	83.8	16.2	12-20
0.075	45	443	93.3	6.7	4-10

The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

: CP-RW-2022-11-23-01 Date: 24-11-22

Name : Improvements and Asphalting to Chikkadinne and Surrounding Areas in Attur Ward No 03 of Yelahanka Satellite Town Sub Division

: Sri. Ramesh Y B, S/o Basavaraj, No:34, Sri Durga Parameshwari Nilaya, Down Bazaar Road, Yelahanka, Bangalore-560064

ner Reference : BBMP/EE/YNK.D/EPMT-04/W.O/25/2022-23

f Receipt : 23-11-22

of Mix : DBM (Dense Bituminous Macadam) - 2nd A Cross Road Thirumala Nagar

of Test : 23-11-22

no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	470	474
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	8
5	Increase in weight of Filter Paper	W5=W4-W3	2	4
6	Bitumen percentage	$\frac{W1-W2+W5}{W1} X100$	6.40	6.00
7	Average percentage	%	6.2	

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Authorized Signatory
Quality Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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Certificate No.: TC-5548

Lab ID : CP-RW-2022-11-23-01 Date: 24-11-22

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 470

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
37.5	0	0	0.0	100.0	100
26.5	0	0	0.0	100.0	90-100
19	32	32	6.8	93.2	71-95
13.2	105	137	29.1	70.9	56-80
4.75	125	262	55.7	44.3	38-54
2.36	63	325	69.1	30.9	28-42
0.3	59	384	81.7	18.3	7-21
0.075	62	446	94.9	5.1	2-8

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
37.5	0	0	0.0	100.0	100
26.5	10	10	2.1	97.9	90-100
19	75	85	17.9	82.1	71-95
13.2	108	193	40.7	59.3	56-80
4.75	86	279	58.9	41.1	38-54
2.36	32	311	65.6	34.4	28-42
0.3	72	383	80.8	19.2	7-21
0.075	63	446	94.1	5.9	2-8

* The results obtained are satisfactory as per standard requirements.

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com